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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/965,628

09/27/2001

Xiong Liu

1834.130US1

2482

7590

08/03/2005

Kirk A. Cesari  
Seagate Technology LLC  
Intellectual Property Dept. - SHK2LG  
1280 Disc Drive  
Shakopee, MN 55379-1863

EXAMINER

NEGRON, DANIEL L

ART UNIT

PAPER NUMBER

2651

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/965,628

Applicant(s)

LIU ET AL.

Examiner

Daniell L. Negrón

Art Unit

2651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 31-33,35 and 42-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 31-33,35 and 42-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 31-33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cameron U.S. Patent No. 6,185,063 in view of Oshima U.S. Patent No. 5,682,360.

Regarding claim 31, Cameron discloses a data storage device comprising a rotating disc assembly comprising a disc surface (see Figs. 3, 4, and 5, and elements 22 and 23) (column 6, lines 26-34).

Cameron further discloses a write transducer in operable transducing relationship to the disc surface (column 5, lines 21-43), a plurality of adjacent data tracks on the disc surface (see Fig. 7 and column 8, lines 6-20), a first region comprising a subset (i.e. block, pair) of the adjacent data tracks disposed at a track-to-track spacing such that the write transducer at least partially overlaps a track with an adjacent track and a second region comprising a subset of the adjacent data tracks, wherein the second region does not contain any of the adjacent data tracks of the first region (column 7, lines 47-61 and column 8, lines 40-48). However, Cameron fails to disclose a data storage device comprising a guard band separating the first region and the second region.

Oshima however, discloses a data storage device wherein data tracks are recorded in independent regions (i.e. track groups) which are separated by guard bands for the purpose of allowing independent recording and reproduction on each region (column 36, lines 47-67).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the data storage device disclosed by Cameron with the data format taught by Oshima in order to provide an area between regions to protect data from adverse effects while recording and reproducing on adjacent regions.

Regarding claim 32, Cameron discloses a data storage device further comprising data written to a first track of the first region and data written to a second track adjacent to the first track, wherein the write transducer is moved in a first radial direction between the first and second tracks such that the data written to the first track is encroached only on one side by the data written to the second track (column 7, lines 62-67).

Regarding claim 33, Cameron discloses a data storage device further comprising data written to a last track (62e) of the first region, wherein one or more intermediate tracks (62c and 62d) are interposed between the second track (62b) and the last track (62e), the write member moving only in the first radial direction in traversing the intermediate tracks such that all data written to each intermediate track is encroached only on one side by data subsequently written to the respective adjacent track (see Fig. 7 and column 7, lines 62-67).

Regarding claim 35, Cameron discloses a data storage device further comprising a sequential data stored on tracks in the first region (column 8, lines 32-39).

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3. Claims 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cameron U.S. Patent No. 6,185,063 as modified by Oshima U.S. Patent No. 5,682,360 and further in view of Wiselogel U.S. Patent No. 6,061,197.

Regarding claims 42-44, Cameron as modified by Oshima disclose a data storage device comprising all the limitations of claim 31 as discussed above but fail to show a guard band comprising a track located between the first region and second region, comprising a track in one of the regions, or comprising the last track of the first region.

However, Wiselogel discloses a magnetic disk data structure wherein guard bands are used to store data tracks for the purpose of creating more space on the disk for data thus increasing data density (see Fig. 4 and column 4, lines 51-64).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the data storage device disclosed by Cameron as modified by Oshima with the magnetic disk structure as taught by Wiselogel since doing so would increase data density by storing data tracks within the guard bands while providing protective space between adjacent track regions.

#### ***Response to Arguments***

4. Applicant's arguments with respect to claims 31-33, and 35 have been considered but are moot in view of the new grounds of rejection.

#### ***Prior Art***

Codilian et al U.S. Patent No. 6,798,592 is cited as of interest for disclosure of a multiple track region magnetic disk wherein tracks are recorded so as to encroach one side of each track.

***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

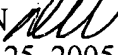
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

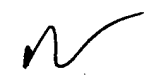
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniell L. Negrón whose telephone number is 571-272-7559. The examiner can normally be reached on Monday-Friday (8:30am-5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DLN   
July 25, 2005

  
**DAVID HUDSPETH**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**